

**PATENT**  
Attorney Docket No. 401188  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

MISUMI et al.

Application No.: Unassigned  
Filed: May 4, 2001  
For: **SEALED  
SEMICONDUCTOR  
DEVICE AND LEAD  
FRAME USED FOR  
THE SAME**

Art Unit: Unassigned

Examiner: Unassigned

**CLAIMS PENDING AFTER PRELIMINARY AMENDMENT**

1. A sealed semiconductor device comprising:  
semiconductor chip portions;  
a lead frame portion including internal lead portions extending on surfaces of the  
semiconductor chip portions; and  
holding members holding said semiconductor chip portions and said internal lead  
portions at intervals and fixed to only one of said semiconductor chip portions and said  
internal lead portions.
  
2. The sealed semiconductor device according to claim 1, wherein said holding  
members include a tape member bonded and fixed to said internal lead portion.
  
3. The sealed semiconductor device according to claim 2, wherein said tape  
member is located in areas peripheral to said semiconductor chip portions.
  
4. The sealed semiconductor device according to claim 1, wherein said holding  
members include protrusions protruding toward said semiconductor chip portions and  
provided in said internal lead portions.

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5. The sealed semiconductor device according to claim 4, wherein said protrusions are bends in said internal lead portions.

6. The sealed semiconductor device according to claim 5, wherein crest portions of the bends of said internal leads contact said semiconductor chip portions.

7. The sealed semiconductor device according to claim 4, wherein said internal lead portions include an original internal lead electrically connected with said semiconductor chip portions and dummy internal leads, and said protrusions are part of said dummy internal lead portions.

8. The sealed semiconductor device according to claim 7, wherein said semiconductor chip portions are almost rectangular, and

    said original internal lead is set toward a pad portion formed nearby centers of said rectangular semiconductor chip portions from a pair of faced sides of said semiconductor chip portions,

    said dummy internal leads are arranged toward the semiconductor chip portions from the other pair of sides facing the direction almost orthogonal to said pair of faced sides.

9. The sealed semiconductor device according to claim 4, wherein said protrusions contact areas peripheral to said semiconductor chip portions.

10. The sealed semiconductor device according to claim 9, wherein  
    said semiconductor chip portions include a semiconductor chip body and a die pad  
for mounting said semiconductor chip body, and  
    said protrusions contact said die pad.

11. The sealed semiconductor device according to claim 1, wherein  
    said semiconductor chip portions include a semiconductor chip body and a die pad  
for mounting said semiconductor chip body, and

said holding members include protrusions fixed to said die pad and protruding toward said internal leads.

12. The sealed semiconductor device according to claim 1, wherein said holding members are located opposite an injection port of a mold when sealing said semiconductor chip portions and said internal lead portions with a resin.

13. A lead frame for a sealed semiconductor device obtained by sealing semiconductor chip portions with a resin, comprising:

an internal lead portion located toward a pad portion located nearly centrally on said semiconductor chip portions and electrically connected with said pad portion; and holding lead portions for holding said semiconductor chip portions and said internal lead at intervals by contacting said semiconductor chip portions.

14. The lead frame according to claim 13, wherein said holding lead portions include said internal lead portion, and including a tape member bonded and fixed to said holding lead portions at positions corresponding to areas peripheral to said semiconductor chip portions.

15. The lead frame according to claim 13, wherein said holding lead portions are dummy internal lead portions.

16. The lead frame according to claim 15, wherein said internal lead portion is set toward said pad portion of almost-rectangular semiconductor chip portions from a pair of faced sides of the almost-rectangular semiconductor chip portions, and

said holding lead portions are arranged toward said semiconductor chip portions from the other pair of sides facing the direction almost orthogonal to said pair of faced sides.